

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD

WATER-HARVESTING CATCHMENT

(No.)
CODE 636

DEFINITION

A facility for collecting and storing precipitation.

PURPOSE

To provide water for livestock, fish and wildlife recreation, or other purposes.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to areas where there is a need for additional water. The contributing area must have a potential to furnish the quantity and quality of water required for the intended use.

CRITERIA

Each water-harvesting catchment must be designed according to a plan suited to the water requirements and the site conditions. The following points shall be considered in designing water-harvesting catchments:

1. Quality and quantity of water required for the planned use.
2. Probability of filling the storage area or basin.
3. Area of apron needed for the required water yield.
4. Materials and method required to insure that the apron is smooth and impervious. Earth, treated earth, wax, rubber, plastic, asphalt, concrete, steel, and other such suitable materials are acceptable for this purpose.
5. Provisions for diverting foreign runoff from the catchment area to prevent damage and excessive sedimentation.
6. Provisions for protecting the apron from damage by runoff in excess of that needed to maintain the design capacity of the conveyance system. An overflow pipe or an

emergency spillway can be used.

7. Need for a sediment trap between the apron and the storage basin.

8. A storage basin that is adequate in size, impermeability, and durability for the required water. Earth basins and tanks of steel, concrete, Butyl rubber and similar facilities are acceptable. Earth dams must have at least 1 ft of freeboard above design high water. All storage basins must be protected from 10-year-frequency storms. An overflow device must be installed in all storage basins.

9. Need for evaporation repressants, such as rock filling and floating covers.

10. Adequate protection to prevent damage from weather, animals, vandals, wildlife, and traffic. Fencing may be necessary.

11. Provisions for maintaining the apron, the conveyance system, the overflow device, and the storage basin.

A shutoff valve protected from freezing shall be installed in the lines between storage tank and the drinking trough or tank. A float valve shall be installed in the watering trough or tank.

A wire fence four feet minimum in height shall be constructed around the catchment and storage areas for protection from animals, vandals, wildlife and traffic.

Catchment Area. The minimum size of the impermeable catchment area shall be such that the required storage can be met using the sum of the average precipitation¹ rates for the location during the period April 1 to November 1. If snow fences are used to

¹ 1" runoff per sq. ft. = 0.623 gals.

deposit snow on the catchment, the size may be reduced in proportion to the estimated snow melt volume. Required storage shall be:

- 1. Twelve gallons of water per day per mature grazing animal during the anticipated grazing season.***
- 2. One and one-half gallons of water per day for sheep.***
- 3. Three gallons of water per day for elk.***
- 4. One gallon of water per day for deer and antelope.***

Storage tank or bag

Capacity. The minimum capacity of the storage facility shall be sufficient to meet the livestock wildlife and/or recreation water requirements for the intended period of use.

CONSIDERATIONS

Water Quantity

1. Effects of trapping or catching of water on surface and ground water. Factors include changes in evaporation, timing of releases from the catchment, and the impact of the type of catchment on surface water versus ground water decreases.

Water Quality

1. Potential improvement in surface water quality resulting from flow reduction's contribution to reducing erosion and sediment yield. Consider the size of the harvest area and the impact of associated structures, such as sediment traps.

2. Effects of reduced dilution water on water quality factors such as dissolved substances, waste assimilation capacity, and dissolved oxygen.

3. Effects of loss of ground water dilution and the reduction of input of dissolved salts and chemicals on ground water quality.

Range planning requirements. This practice must: (1) facilitate proper range use by improving distribution of grazing over the range; (2) meet the water requirements of livestock, fish and wildlife and/or recreation with adequately distributed water supplies; and (3) be the most feasible method of development for the needed water supply. If designed for stockwatering, the distance should be such that livestock need not travel more than one mile nor less than one-half mile between forage and dependable water on gentle relief. On rough relief, the greatest travel distance from forage to water should not exceed one-half mile nor be less than one-quarter mile. Stock water facilities will not be planned at closer intervals than these.

PLANS AND SPECIFICATIONS

Plans and specifications for water-harvesting catchments shall be in keeping with this standard and shall describe the requirements for installing the practice to achieve its intended purpose.

OPERATION AND MAINTENANCE